

THE GENUS *CHILEOGOVEA* (OPILIONES, CYPHOPHTHALMI, PETALLIDAE)

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ABSTRACT. The opilionid genus *Chileogovea* is reviewed and a new species, *Chileogovea jocasta*, from Malleco Province, Chile, described. Some supplementary illustrations and new records from mainland Chile of the type species, *C. oedipus* Roewer, are provided.

The opilionid genus *Chileogovea* was established by Roewer in 1961 for a new species, *Chileogovea oedipus*, from Chepu, Isla de Chiloé, Chile. Roewer's description was sufficient to establish the validity of the new genus, which he placed in the Family Sironidae (the only named family of cyphophthalmids at the time), but omitted important details, such as the form of the male genitalia. In 1970, Juberthie and Muñoz-Cuevas produced a new description and new illustrations, providing information on these characters, and giving a new record from a mainland locality, Nahuelbuta. They noted the resemblance of *Chileogovea* to the New Zealand genus *Rakaia* Forster, and assigned both to the Family Sironidae Simon. In 1980, in a study of the higher classification of cyphophthalmids, I placed the genus *Chileogovea* in the new Family Pettalidae, together with *Rakaia* and the other southern hemisphere cyphophthalmids previously in Sironinae (*Pettalus* Thorell, *Purcellia* Hansen and Sörensen, *Speleosiro* Lawrence, *Parapurcellia* Rosas Costa, and *Neopurcellia* Forster; Juberthie [1988] has named a new genus, *Austropurcellia*, which also belongs in this family). The family is distributed in South Africa, Sri Lanka, New Zealand and Australia, and Chile.

In 1981, 1985-86, and 1992, Norman Platnick, Oscar Francke and Randall Schuh of the American Museum of Natural History made collecting trips to Chile, as did A. Newton and M. Thayer in 1982. Among their material were examples of *Chileogovea*, including specimens of a new species, and near topotypes and several new mainland records of *C. oedipus*. I thank Dr. Platnick for the opportunity to study these specimens, all of which have been deposited in the American Museum of Natural History (AMNH).

James Cokendolpher and Emilio Maury provided helpful reviews of the manuscript.

Specimens were observed, measured, and drawn using a dissecting microscope. The right chelicera, pedipalp, first and fourth legs, and penis were then mounted in glycerine on a microscope slide and examined with a compound microscope outfitted with Nomarski Interference Contrast optics, and measured with an ocular micrometer. All measurements are in millimeters; in the description, measurements of appendage segments are given in order from basal to distal (beginning with trochanter for pedipalps, femora for legs), lengths first, separated from widths by a diagonal stroke, and L/W ratios, if significant, follow in parentheses.

Family Pettalidae Shear

Genus *Chileogovea* Roewer

Chileogovea Roewer, 1961:99; type species *C. oedipus* Roewer. Juberthie & Muñoz-Cuevas, 1970:109. Shear, 1980:25. Cekalovic, 1985:8.

Cekalovic (1985) evidently was unaware of the Family Pettalidae, and repeated Roewer's original assignment of the genus to the Family Sironidae, Subfamily Stylocellinae, already recognized as incorrect by Juberthie & Muñoz-Cuevas in 1970.

A redescription of the genus was given in 1970 by Juberthie & Muñoz-Cuevas, based entirely upon the characters of *C. oedipus*, the only species known at that time. The discovery of a second species, *C. jocasta*, requires further emendation of the generic diagnosis as follows.

Coxae 1, 2 free, 3, 4 fused. Eyes absent. Ozopores type 3. Chelicerae (Fig. 3) robust, dorsally crested. Cheliceral fingers with both large and small teeth (Figs. 4, 12). Abdominal sternites 8,

9 free, tergite 9 free. Tarsus 4 entire. Male secondary sexual modifications: adenostyle lamellar, sharply curved (Figs. 8, 14); sternites 5–8 shallowly depressed in midline, or sternites 7, 8 each with pair of paramedian tubercles (mistakenly stated by Shear [1980] to be on 6, 7); anal operculum with or without prominent median ridge; tergite 9 evenly rounded posteriorly or shallowly excavate. Penis (Figs. 9, 10, 15, 16) of *Siro* type.

Distribution.—Central Chile, Concepción south to Chiloé.

Notes.—I cleared the posterior ends of males of both species of *Chileogovea* in trypsin, mounted the cleared parts on microscope slides, and examined them under high magnification for gland pores. Sternal gland pores occur in the males of the genera *Huitaca* and *Ogovea* (Family Ogovidae), and *Troglosiro* (family unknown), while anal gland pores are found in tergite 9 of male Sironidae. Because of the modifications of the sterna I expected to find glands, but none could be detected in either species, and anal glands were likewise missing. Thus the function of the sternal modifications in male *Chileogovea* remains unclear.

The two species of the genus can be separated by means of the diagnosis given below under the description of *C. jocasta*.

Chileogovea jocasta, new species

Figs. 1–10

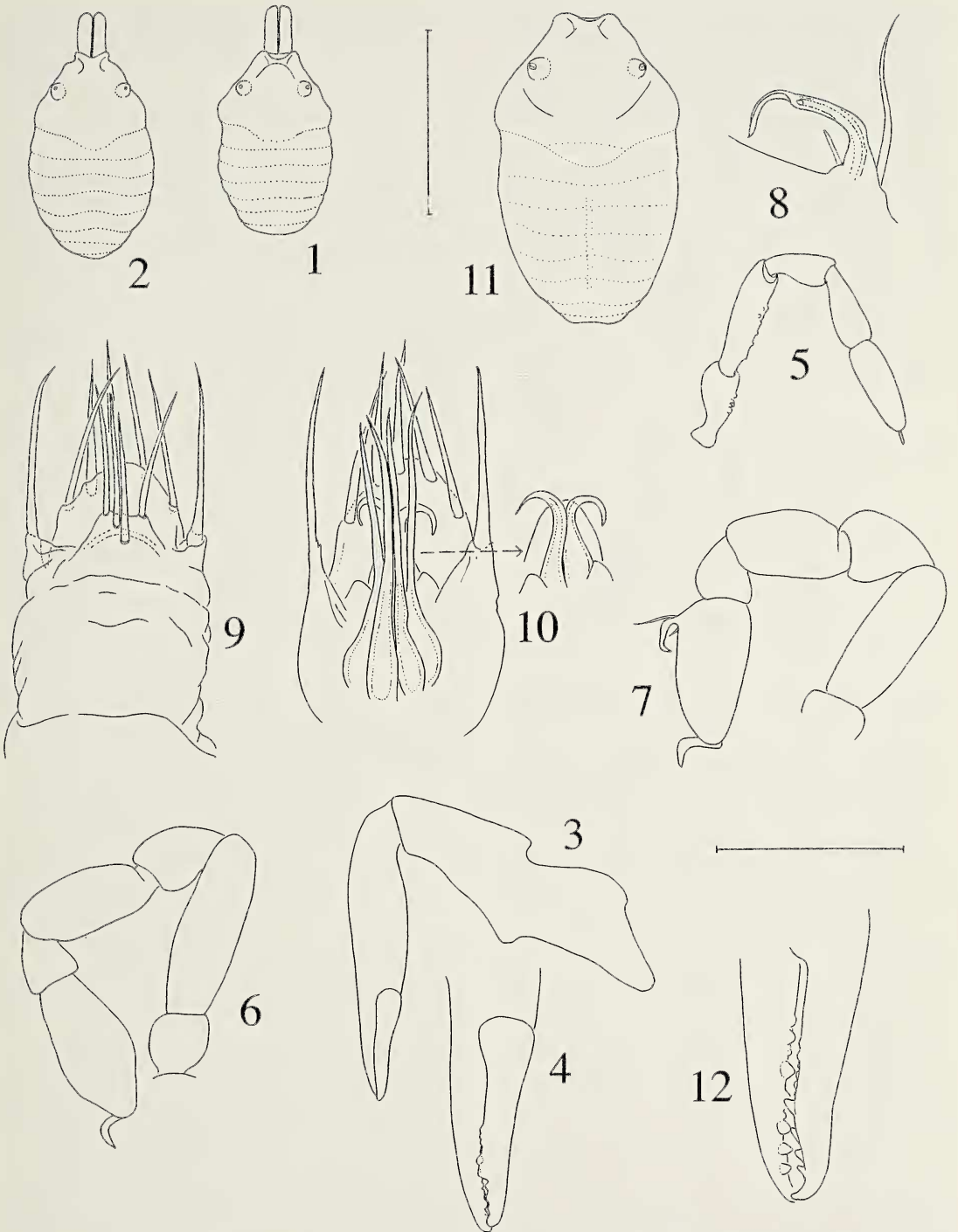
Type data.—Holotype male, paratype female, seven additional paratype males, and nine additional paratype females (AMNH) from Berlese sample of forest litter and moss, montane forest zone, 300 m elevation, Monumento Nacional Contulmo, Malleco Prov., Region IX (de la Araucanía), Chile, collected 31 January 1986 by N. I. Platnick and R. T. Schuh. Additional paratype female (AMNH) from the same locality, but from 425 m elevation, collected 23 January 1985 by N. I. Platnick and O. F. Francke; 32 male and 25 female paratypes (AMNH) from litter Berlese, 560 m elevation, Pata de Gallina, Arauco Prov., Region VIII (Bío Bío), collected 11 February 1992 by N. I. Platnick, P. Goloboff, and M. Ramírez.

Etymology.—Roewer was probably referring to the well known Greek myth in naming his species *oedipus*, though he did not explain his reasons for doing so. I follow suit by naming this new species for another figure from the same myth (the name used as a noun in apposition).

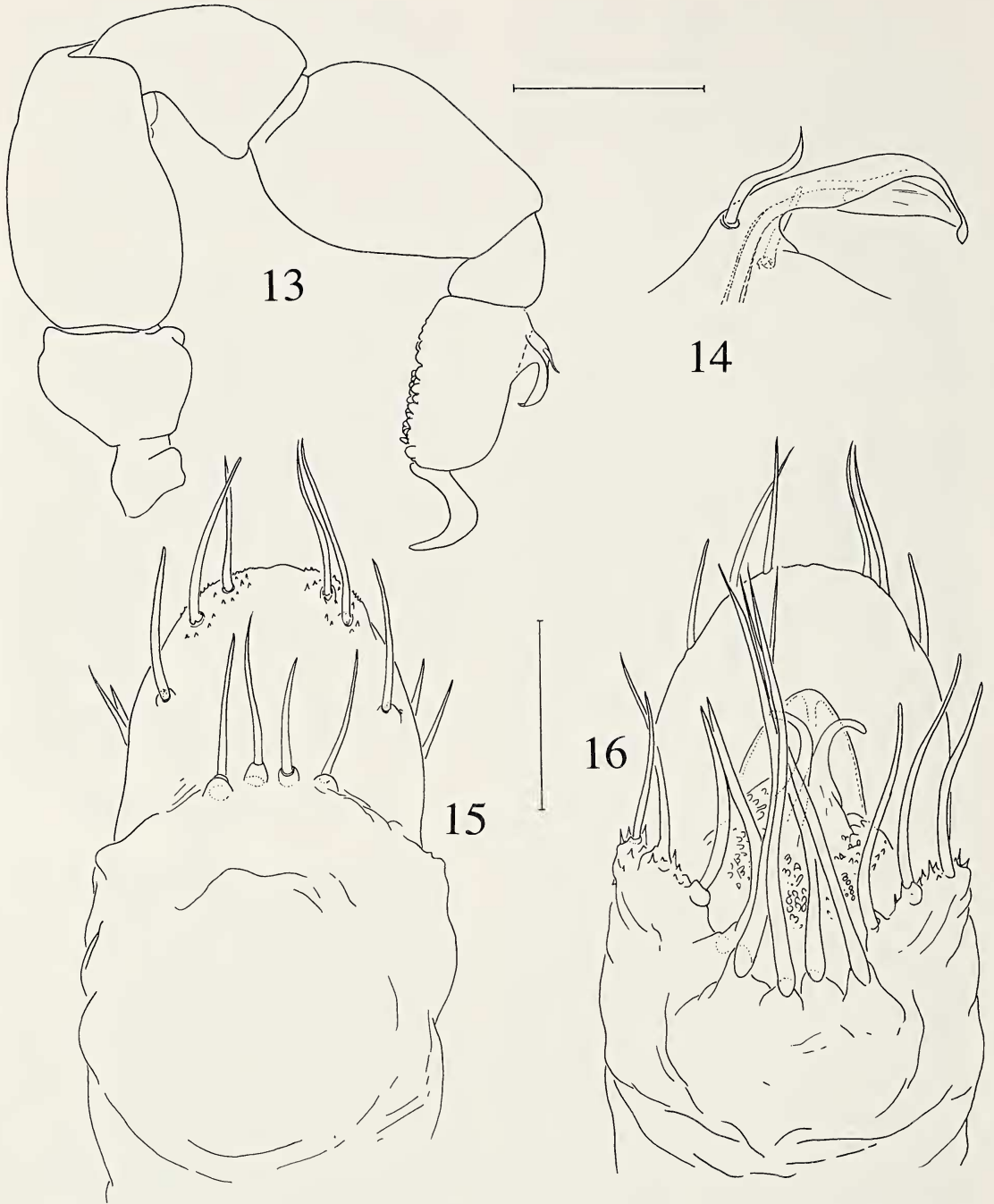
Distribution.—Known only from the type localities.

Diagnosis.—Distinct in numerous characters from *C. oedipus*, the only other known species of the genus. *Chileogovea jocasta* males and females are less than 2 mm long, the males lack conspicuous secondary sexual modifications of the posterior sternites, the adenostyles of males are markedly more slender (Fig. 8), the fourth tibia (Fig. 7) has a L/W ratio of 1.77, and the setation of the penis is reduced (Figs. 9, 10); *C. oedipus* ranges from 2.5 to 3.28 mm long, the males have strongly modified posterior sternites, broad adenostyles (Fig. 14), the fourth tibia (Fig. 13) has a L/W ratio of 1.58, and the penial setae are more numerous (Figs. 15, 16).

Description.—*Male*: Total length, 1.7, greatest width, 1.05, L/W = 1.62. Body (Fig. 1) generally egg-shaped, widest at posterior part of cephalothorax, not dorsoventrally arched as in *C. oedipus*. Dorsum shining, with heavily pebbled microsculpture. Ozophores well removed from cephalothorax margin, directed straight upwards; seen laterally, paler in color than rest of dorsum. Cephalothoracic sulcus distinct laterally, less so near midline; abdominal sulci pronounced. Posterior end of body evenly rounded. Ventral thoracic complex as in *C. oedipus*. Abdominal sternites without conspicuous modifications, sternites 6–8 somewhat depressed in midline. Anal operculum without crest. First cheliceral segment (Fig. 3) 0.83 long, 0.26 wide, strong dorsal crest present, heavily pebbled. Second cheliceral segment 0.77 long, 0.14 wide, straight, evenly tapered, fixed finger 0.29 long, 38% length of second cheliceral segment. Cheliceral teeth (Fig. 4) irregular, large and small teeth mixed. Palpal segments (Fig. 5) 0.22, 0.31/0.08, 0.18, 0.20/0.08, 0.25. Legs robust, with heavily pebbled ornamentation. Leg 1 (Fig. 6) segments 0.48/0.15 (3.2), 0.24/0.16, 0.36/0.16 (2.25), 0.16/0.14, 0.39/0.19. Leg 4 (Fig. 7) segments 0.41/0.15 (2.73), 0.22/0.19, 0.32/0.18 (1.77), 0.17/0.17, 0.37/0.18. Adenostyle (Fig. 8) sharply curved, with long, acute tip reflexed to nearly touch dorsal surface of tarsus. Penis in ventral view (Fig. 9) with four ventral setae closely grouped on distinct tubercle; in dorsal view (Fig. 10) with five apical setae slightly removed ventrally from apical margin of dorsal plate, lateral setae single, well separated from dorsal plate, four dorsal setae closely grouped, with bulbous bases; gonopore margins with two long, acute,



Figures 1-12.—(1-10, *Chileogovea jocasta*, n. sp.), 1, dorsum of male; 2, dorsum of female; 3, chelicera of male; 4, cheliceral teeth of male; 5, palpus of male; 6, leg 1 of male; 7, leg 4 of male; 8, adenostyle; 9, penis, ventral view; 10, penis, dorsal view. (11, 12, male *Chileogovea oedipus* Roewer), 11, dorsum; 12, cheliceral teeth. Scales = 1.85 mm for Figs. 1, 2, 11; 0.5 mm for Figs. 3, 5, 6, 7; 0.25 mm for Fig. 4; 0.13 mm for Figs. 8-10, 12.



Figures 13–16.—Male *Chileogovea oedipus*: 13, leg 4; 14, adenostyle; 15, penis, ventral view; 16, penis, dorsal view. Scales = 0.5 mm for Fig. 13; 0.13 mm for Figs. 14–16.

curved fingers with lateral lobes at bases. Color dark blackish brown, dorsally with irregular black streaks in older specimens; legs bright orange-brown.

Female: (Fig. 2). Total length, 1.85 mm. Closely resembling male in all nonsexual characters.

Notes.—One additional male whose penis was dissected had four, rather than five, apical setae.

At all three known localities, this species is syntopic with *C. oedipus*, taken in the same Berlese sample.

Chileogovea oedipus Roewer
Figs. 11–16

Chileogovea oedipus Roewer, 1961:100 (male holotype, male paratype, two female paratypes from Chepu, Isla Chiloé, 850 ft. elevation, mixed evergreen forest; in Senckenberg Museum, Hamburg, not examined); Juberthie & Muñoz-Cuevas, 1970:110.

The excellent and detailed description by Juberthie & Muñoz-Cuevas needs little supplement. However, they did not emphasize the distinctiveness of the posterior paramedian sternal tubercles, which, in most populations, on their median faces are nearly perpendicular to the sternite surface. This face is bordered by a semicircle of small, regular tubercles about one-third the size of the tubercles ornamenting the body. They did not mention at all a single, very much enlarged tubercle situated in the midline of the fourth sternite. This tubercle is in the form of an equilateral triangle with its apex pointing posterior; each side of the triangle is about five times as long as an ordinary body tubercle.

A figure of the dorsum (Fig. 11) of a specimen from a new locality (Rio Negro), and of the cheliceral teeth (Fig. 12), leg 4 (Fig. 13), and adenostyle (Fig. 14) are presented here for comparative purposes. The illustrations of the penises of males from two localities given by these authors were reproduced at small size, and I provide larger figures of the penis of a male from Rio Negro (Figs. 15, 16).

The important differences between this species and the foregoing new one are enumerated above. Probably due to its rather wide distribution (about 750 north-south km), *C. oedipus* shows some variation in both size and penial setation. Both Roewer (1961) and Juberthie & Muñoz-Cuevas (1970) give the length of a male specimen from Chepu as 2.5 mm and the latter gave the length of a female from Chepu as 3.0 mm; I measured a single Chepu male as 2.65 mm long; two females were 2.75 and 2.8 mm long. Juberthie & Muñoz-Cuevas (1970) had a male from Nahuelbuta available but did not give its length; a male from Nahuelbuta examined by me was 3.28 mm long, and males from the Rio Negro region averaged 2.88 mm long. Juberthie and Muñoz-Cuevas (1970) illustrated the penises of males from Chepu and from Nahuelbuta; the Chepu

male had three ventral and six apical setae, while the Nahuelbuta male had four ventral and four apical setae. A male from Rio Negro (Figs. 15, 16) shows either five ventral or four (rather than the usual three) lateral setae on one side, and six apical setae. The Estero Nonquen population seems the most divergent. Males differ from those in other populations in having the sternal lobes and the crest on the anal plate reduced; the legs of both sexes are somewhat more slender than in individuals of the same body length from Rio Negro. The penis has four ventral and six apical setae, and the ventral plate has an irregular distal margin. It is possible this population represents a third species, but for now I consider it within the range of variation of *oedipus*.

The penises illustrated by Juberthie & Muñoz-Cuevas, together with the size differences I observed, led me at first to suspect that the Nahuelbuta and Estero Nonquen populations were distinct species, but more careful examination of these and other specimens, as well as comparisons with the new species *C. jocasta*, caused me to conclude that the differences were simply variations in a geographically widespread species.

Specimens examined.—CHILE: Region VIII (Bío Bío) *Arauco Prov.*, Pata de Gallina, 560 m elevation, litter in forest, 11 February 1992, N. I. Platnick (NIP), P. Goloboff, M. Ramírez, 11 males, 4 females; Region IX (de la Araucanía), *Concepción Prov.*, Estero Nonquen, 90 m elevation, litter berlese in modified forest, 16 November 1981, N. I. Platnick, R. T. Schuh (RTS), 4 males, 5 females; *Malleco Prov.*, Parque Nacional Nahuelbuta, 1250 m elevation, mossy forest floor litter (*Nothofagus, Auracaria*), 19 November 1981, NIP, RTS, male; Monumento Nacional Contulmo, 300 m, wet forest, 31 January 1986, NIP, RTS, 6 males; Region X (de los Lagos), *Llanquihue Prov.*, 13 km west of Rio Negro, 20 m elevation, Berlese of litter from edge of disturbed forest, 24 January 1986, NIP, RTS, 10 males, 9 females; 35 km northwest of Rio Negro, 240 m elevation, Berlese of litter from edge of disturbed forest, 24 January 1986, NIP, RTS, 9 males, 7 females; Lago Chapo, 11.7 km east of Correntoso (site 657), berlese of forest leaf and log litter, 320 m elevation, 16–27 December 1982, A. Newton (AN), M. Thayer (MT), male; 13.5 km east of Correntoso (site 656), window trap in Valdivian rainforest, 310 m elevation, AN, MT, male; berlese of forest leaf and log litter, male, female. *Osorno Prov.*, hills south of Maicolpué, 75 m elevation, wet disturbed forest, 26 January 1986, NIP, RTS, 2 males, 4 females; 10 km east of Bahía Mansa, 15 m elevation, disturbed forest, 30 January 1985, NIP, O. F. Francke (OFF), male, female; Volcán Osorno, 610 m elevation, mature forest, 12 February 1985, NIP,

OFF, male, female; Chincay, 10 km east of Bahía Mensa, 50 m elevation, berlese forest leaf and log litter in secondary Valdivian forest, AN, MT, 3 males, female. *Chiloé Prov.*, Isla de Chiloé, Chepu, elev. 15 m, wet forest, 2 February 1985, NIP, OFF, male, 2 females.

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